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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,303

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EXAMINER

FANG, SHANE

ART UNIT

PAPER NUMBER

4131

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,303	Applicant(s) TAKASE, TORU	
	Examiner SHANE FANG	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/29/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/29/2007, 08/16/2006, 06/01/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: claim 6 does not end in a period. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the phrase "the content". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of 35 U.S.C. 102(b):

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by **Shirokura et al. (US Pat. 5,340,906)**.

Claims 1, 2 and 4 are anticipated by any polyester disclosed by Shirokura et al. (Abstract).

As to Claims 5 and 6, Shirokura et al. further teaches fiber made from polyester (Col 1. ll 20). Shirokura et al. does not disclose the BWS - Δn properties of the resultant fibers. However, the composition is the same, and

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therefore, the product is presumed to inherently possess the same properties.

See MPEP 2112.

Shirokura et al. are silent on the use of antimony catalyst with the ratio as recited in claim 1. However, claims 1 and 5 are product-by-process claims that are limited by and defined by the process. Determination of patentability is based on the product itself, not on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. **In re Thorpe**, 777 F. 2d 695, 698,277 USPQ 964,966 (Fed. Cir. 1985). See MPEP § 2113.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Walker et al. (US Pat. 6,020, 056)**.

Walker et al. disclosed a composition of polyethylene terephthalate having a diethylene glycol content of 0.7% by weight with an intrinsic viscosity of 0.67 contained 5 ppm Fe, 77 ppm Mn, 36 ppm Na, 61 ppm P, 260 ppm Sb and 69 ppm Si as analyzed by ICP spectroscopy (COMPARATIVE EXAMPLE 1).

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Walker et. al. further teaches the use of a suitable catalyst for condensation polymerization, including but not limited to antimony trioxide and crystalline aluminosilicate (molecular sieve), may be added prior to or after the fine particulate (Col 5. ll 44-49).

As to claim 1, *Walker et al.* are silent on using the combination of antimony trioxide and antimony (tetraoxide and/ pentaoxide). However, claim 1 is a product-by-process claim that are limited by and defined by the process. Determination of patentability is based on the product itself, not on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. **In re Thorpe**, 777 F. 2d 695, 698,277 USPQ 964,966 (Fed. Cir. 1985). See MPEP § 2113.

As to claim 3, *Walker et al.* are silent on the cooling crystallization temperatures, heating crystallization temperatures, and half-time crystallization τ . In view of the substantially identical composition, the adduct would possesses the claimed crystallization properties. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. **In re Best**, 562 F. 2d 1252, 195 USPQ 430 (CCPA 1977); **In re Fitzgerald**, 205 USPQ 594 (CCPA 1980). See MPEP § 2112.

9. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shirokura et al. (US Pat. 5,340,906)** as applied to claims 1, 2, and 4-6 above, and further in view of **Shima et al. (JP Pat. 4,810,385)**.

Shirokura et al. discloses a process of making polyester using antimony compound including antimony trioxide and antimony pentaoxide employed as a catalyst (Col 5, ll 22-27). *Shirokura et al.* further teaches the general amount of antimony adding to the reaction mixture is 50-500 ppm based on the resultant polyester (Col 5, ll 40). *Shirokura et al.* fails to teach to ratio of antimony catalysts used for producing polyesters.

Shima et al. teaches the use of antimony tetraoxide as a polymerization catalyst for producing polyesters to remove the greenish gray color of polyester caused by using trioxide antimony (English translation, Pg 4, ¶ 1, Pg 5, ¶ 1).

As to Claim 7, it is well known polyester synthesis commonly comprises of steps of esterification and polycondensation.

As to Claim 7 and 10, these references differ from the claim by failing to disclose the ratio of diantimony trioxide vs. diantimony pentaoxide/tetraoxide. However, the ratio of two catalysts appears to merely determine the catalyst activity for the synthesis of polyester. The normal desire of scientists or artisans to improve upon that is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages. **In re Peterson**, 315 F.3d at 1330, 65, USPQ2d at 1382. In this particular case, the motivation can be the minimizing color of resultant polyester by the optimizing the ratio of diantimony trioxide vs. diantimony tetraoxide/pentaoxide.

As to Claim 8, the reference differs from these two claims by failing to disclose a range with sufficient specificity to anticipate the claimed range (100-

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1000 ppm). However, the reference teaches a range (50-500 ppm) that overlaps the claimed range, and it has been held that overlapping ranges are sufficient to establish *prima facie* obviousness. See MPEP 2144.05. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the range taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness.

As to Claims 9, and 11, *Shirokura et al.* further discloses that these antimony compounds may contain elements other than antimony, such as Pb, As, Fe, S, Cl, Ca, Se and Sb in the range of not more than 3 weight %, as impurity (Col. 5, ll 30-35). The reference differs from these two claims by failing to disclose a range with sufficient specificity to anticipate the claimed range (1-100 ppm). However, the reference teaches a range that overlaps the claimed range, and it has been held that overlapping ranges are sufficient to establish *prima facie* obviousness. See MPEP 2144.05. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the range taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **Suzuki et al. (US Pat. 6,130, 262)**

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8 a.m. to 6:30 p.m. EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (271)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
Art Unit 4131

S.F